

Observations of the Meteor Shower of November 27, 1885, made at the Glasgow Observatory. By Prof. R. Grant, LL.D., F.R.S.

The meteors were first seen at the Glasgow Observatory a little before six o'clock in the evening. It was not long before it became evident that the number of meteors visible in a given time was gradually increasing. It was equally manifest that the position in the heavens from which the meteors appeared to diverge was situated in *Andromeda*, very near the stars γ and χ of that constellation. In general the meteors resembled in brightness stars of the 2nd and 3rd magnitudes, but a considerable number of them were equal to stars of the 1st magnitude, and every now and then there would burst forth a beautiful meteor rivalling in splendour the planet *Jupiter*. The colour of the meteors was generally white. In the case of the larger meteors, however, the light at the instant of breaking up of the meteor was characterised by a ruddy or orange hue. All the meteors except those in the immediate vicinity of the radiant point were in every instance accompanied by a luminous train, which, however, remained visible only two or three seconds. The abundance of meteoric apparitions seemed to have attained its maximum about 6^h 40^m G.M.T. Henceforth they gradually declined in numbers, and a haze coming on about 8 P.M. practically put an end to the wondrous display. Occasionally, however, a meteor might be seen traversing the atmosphere until about 10 P.M., when every trace of the phenomenon disappeared.

From a comparison of the apparent positions of three stationary meteors relatively to γ and χ *Andromedæ* I estimated the position of the radiant point to be very nearly R.A. 24°, Dec. N. 45° 30'. At the commencement of the shower Mr. H. Urquhart, one of the Observatory assistants, was detailed to count the meteors visible. The following are the results of his enumeration:—

G.M.T. h m	Number of Meteors visible per minute.			G.M.T. h m	Number of Meteors visible per minute.						
	6 3	6 8	6 13	6 18	6 23	6 30	6 35	6 40	6 45	6 50	6 55
...	54	7 00	...	...	...	60	...	...
...	56	7 5	...	...	...	74	...	...
...	58	7 10	...	...	...	44	...	...
...	67	7 15	...	...	...	32	...	...
...	50	7 20	...	...	...	33	...	...
...	64	7 25	...	...	...	23	...	...
...	80	7 30	...	...	...	23	...	...
...	80	7 35	...	...	...	38	...	...
...	50	7 40	...	...	...	24	...	...
...	48	7 45	...	...	...	23	...	...
...	70	7 50	...	...	...	23	...	...

Mr. Tannien, another assistant, made a partial enumeration of the meteors visible with the following results :—

G.M.T.	Number of Meteors visible per minute.			G.M.T.	Number of Meteors visible per minute.		
	h	m	h		...	...	...
6 24	60	7 1	...	...	74
6 36	100	8 9	...	...	9

Mr. Urquhart continued counting without interruption the number of meteors visible from $5^h 58^m$ till $7^h 50^m$, embracing an interval of one hour and fifty-two minutes, and obtained 5,806 as the aggregate number of meteors visible. From what I have seen of such apparitions I am inclined to think that the number of meteors actually visible from the Glasgow Observatory during the interval to which I refer was at least four times as great as this number.

It has been my good fortune to have seen from this Observatory the great meteor shower of November 13, 1866, and also the meteor shower of November 27, 1872, in both instances under exceptionally favourable circumstances, and at the time of the recent shower I was naturally led to institute a comparison between the brilliant apparition then visible and the two preceding displays. The shower of the *Leonides* appeared to me to be beyond comparison the grandest of the three apparitions both in respect to the abundance and the magnitude of the meteors. On the other hand the recent apparition of the *Andromedae* offered a most striking resemblance in every respect to its brilliant predecessor of 1872.

The Biela Meteor Shower of November 27, 1885. By Prof. C. Pritchard, D.D., F.R.S.

Preparations were duly made at the University Observatory for recording what might occur in relation to the expected *Andromeda* meteors. Specially it was proposed to watch the neighbourhood of the radiant through a 4-inch telescope with a low power eye-piece, giving a field of about $50'$ diameter.

The sky was generally fitful, never being wholly without cloud and frequently overcast. Slight rain fell at 9 P.M., and at intervals between that hour and 2 A.M.

Very many meteors were reported as flying about the sky by pedestrians in the city, as soon as it became sufficiently dark. The first count at the Observatory was made by the two assistants from 6 to 6.10 P.M., the one looking on the eastern sky and the other on the western. During this period sixty were counted,